



The Chemical Company

Global Intellectual Property

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

In re Application of

Serial No. 10/567,107

Filed: May 3, 2006

For: BIODEGRADABLE POLYESTER MIXTURE

DECLARATION

I, Robert Loos, Dr. rer. nat., a citizen of the Federal Republic of Germany and residing at Rathenaustrasse 2, 68165 Mannheim, Germany, declare as follows:

I am a fully trained chemist, having studied chemistry from October 1991 to December 2003 at the University of Munich (LMU).

I obtained my doctor's degree from the said university in December 2003.

Since 2006 when I joined BASF SE of 67056 Ludwigshafen, Germany, I have been working in the field of polymer research.

I am well acquainted with the subject matter of Application Serial No. 10/567,107 and have carefully studied the cited reference; namely

US 6,018,004 and US 5,373,058

The object of the invention disclosed and claimed in Application Serial No. 10/567,107 is the biodegradable polyester.

In order to show that Application Serial No. 10/567,107 does involve an inventive step, I have carried out the following experiments:

Test Report

Preparation of the blends:

Polybutylenterephthalatadipat (component i, Ecoflex® FBX 7011 BASF SE), starch (component ii, Cerestar® C dry Gel) and epoxid containing polymer (component iii, Joncryl® ADR 4368 S), were weighed into an extruder at the ratios listed in table 1 and mixed at 170°C (see reference example 1 and example according to the invention 2). Sheets were extruded on a chill roll (reference sheet F1 from 1 and sheet according to the invention F2 from 2).

Table 1: Composition of the compounds (w/w) 1 and 2

Example	% w/w Ecoflex	% w/w starch	% w/w Joncryl
1 (reference)	70	30.0	0.0
2	70	29.8	0.2

From the sheet test strips were cut out and tested for maximum stress in compliance with ISO 527-3:2003 but with test specimen in S3A format and at 50 mm/s. The relevant mechanical data are listed in table 2.

Table 2: Maximum stress of sheets F1 and F2 acc. to ISO 527-3:2003

Example	maximum stress [MPa]
F1 (reference)	11.7
F2	12.5

Results in table 2 demonstrate that by adding 0.2 % w/w Joncryl the mechanical properties of the sheet such as maximum stress can be enhanced.

From the sheet strips were cut (approx. 2 x 5 cm). The biodegradation tests were carried out according to the disclosure on page 17, lines 13 to 15 of the description.

Table 3: Biodegradation rate defined as specified on page 17, lines 13 to 15 of the description

Example	% w/w after 0 weeks	% w/w after 1 week	% w/w after 2 weeks	% w/w after 3 weeks	% w/w after 4 weeks
F1 (reference)	100	96	93	84	73
F2	100	95	88	82	68

Results listed in table 3 demonstrate better biodegradability of sheet F2 according to the invention (containing Joncryl) than of reference sheet F1 (without Joncryl).

I further declare that all statements made herein of my own knowledge are true and that all statements made on information or belief are believed to be true; and further that these statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Signed at 67056 Ludwigshafen, Germany, this 11th day of Sept 2009.



Signature of Declarant